

ABSTRACT

An induction coil suitable for use either as a rotor or a stator in electromotive devices such as an electric motor, an alternator or a generator. The induction coil is made by stamping, etching or machining slots in plural metallic sheets. The metal between the slots on each slotted sheet constitute a plurality of substantially parallel electrical conductors. In a preferred embodiment of the induction coil, the individual slotted sheets are stacked to include two or more sheets, with the conductors of the top sheet substantially filling the slots in the bottom sheet, then rolled into a first cylindrical member. The process is repeated with a second stack of slotted sheets to form a second cylindrical member having a different diameter than the first cylindrical member. The first and second cylindrical members are coaxially assembled in axial alignment to form an assembled cylindrical member. The appropriate conductors on the first and second cylindrical members are electrically interconnected then the first and second cylindrical members are impregnated and encapsulated with a suitable electrically insulating material to form a free-standing cylindrical tube. The conductors are then electrically isolated and a connector ring is affixed to the end of the tube to form an induction coil by establishing suitable electrical interconnection between the conductors on the individual slotted members. The construction permits the thickness of the conductors to be increased and the width of the slots between adjacent conductors in the assembled coil to be decreased thereby reducing conductor resistance and increasing both the conductor density and the current carrying capability of the conductors in the assembled coil.